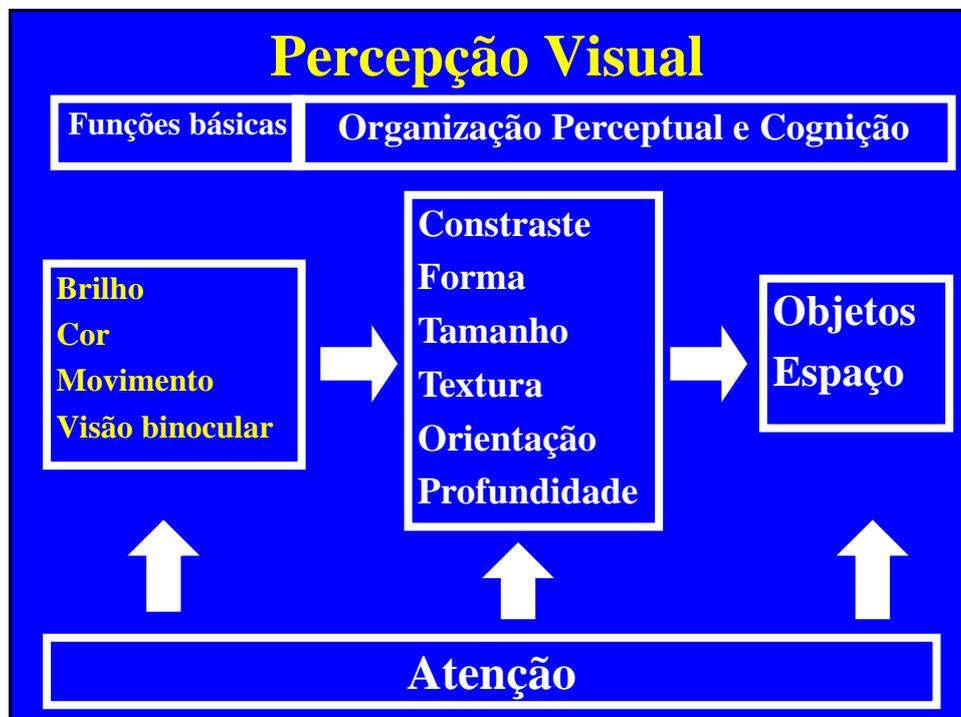
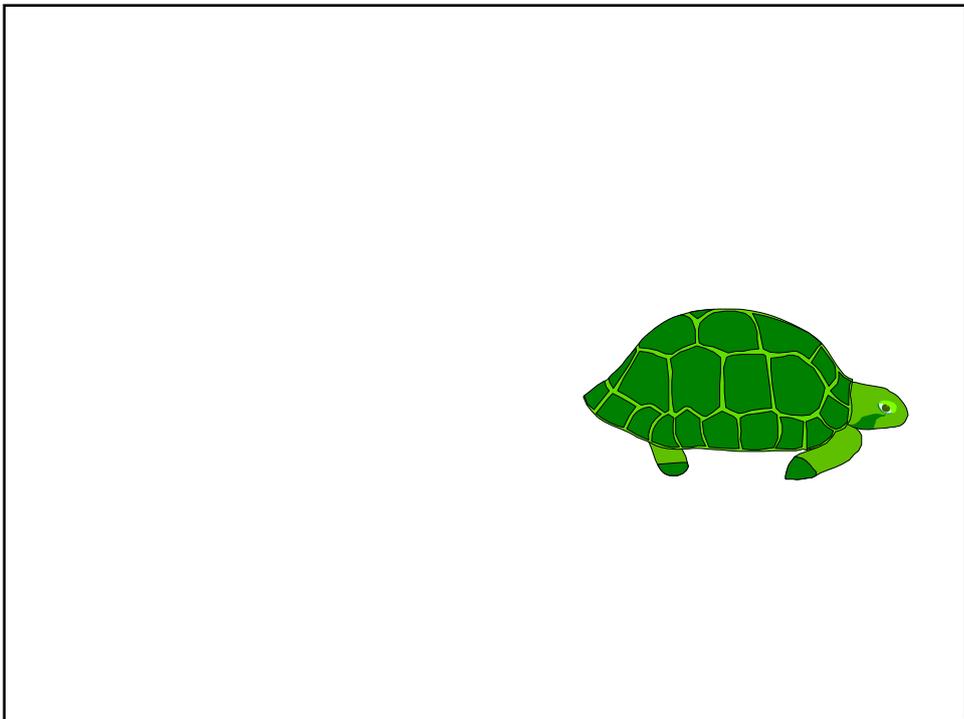
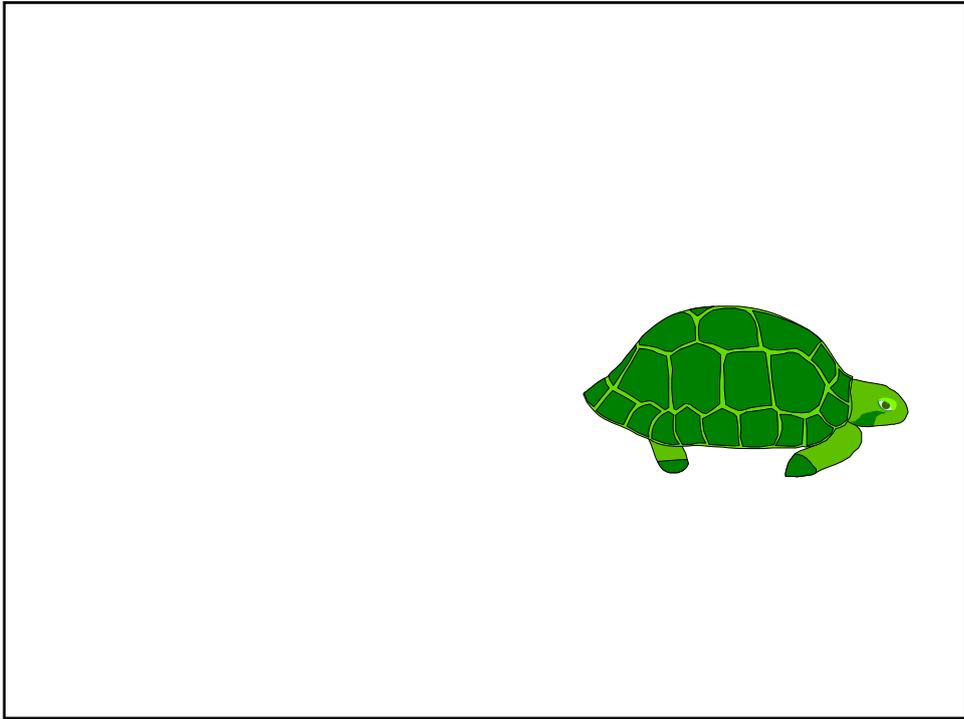
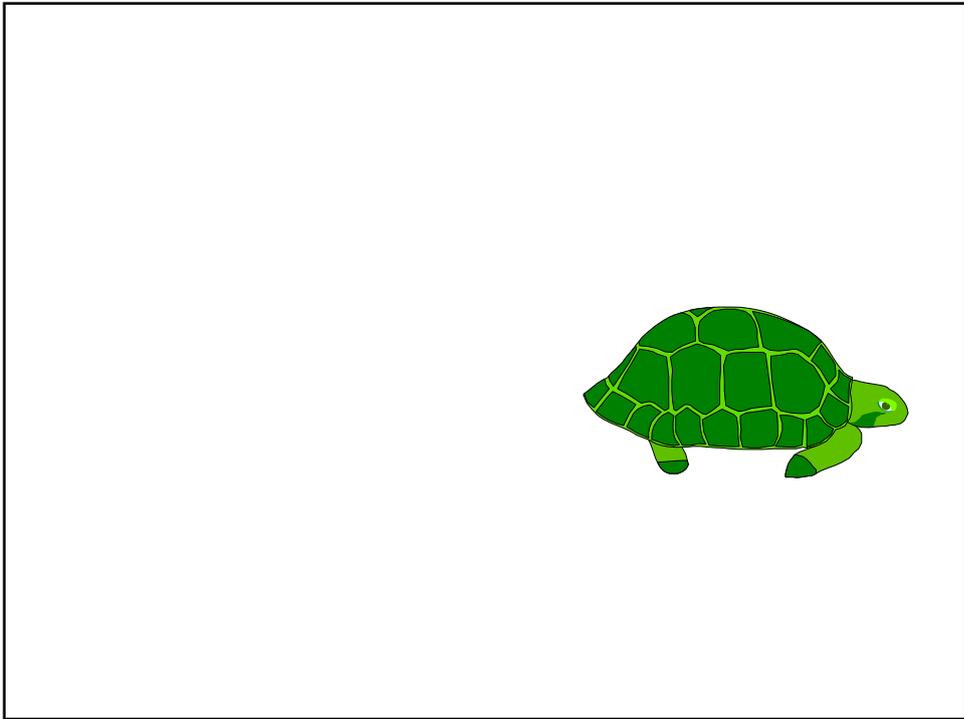
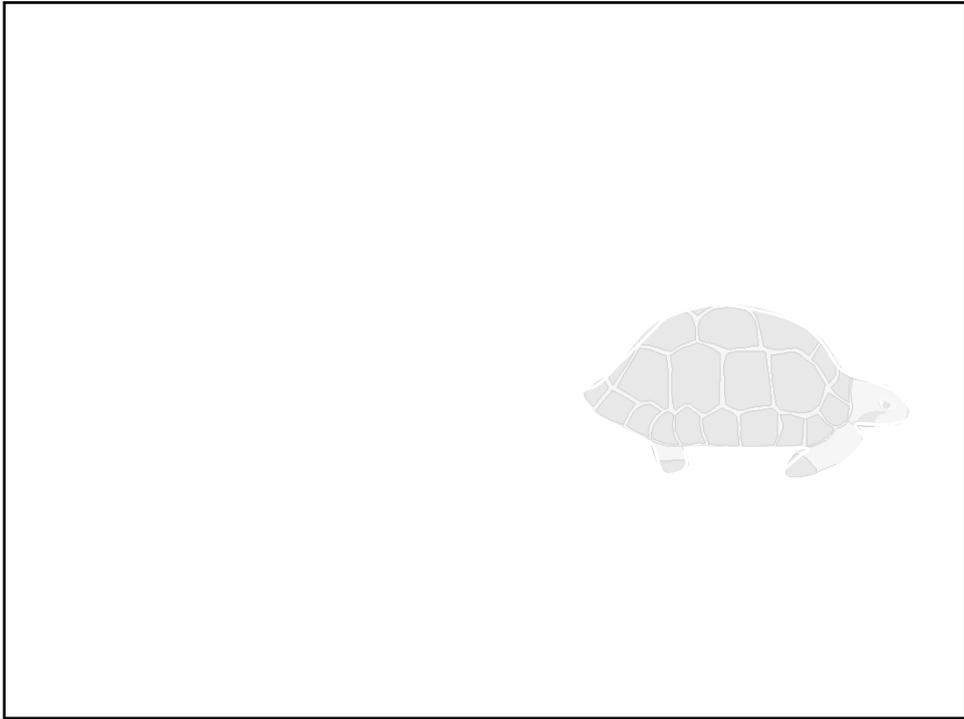


O SISTEMA VISUAL E A PERCEPÇÃO VISUAL







Estímulo: Luz

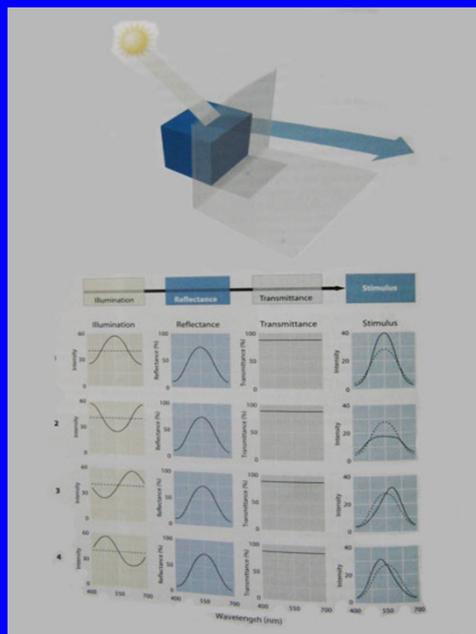
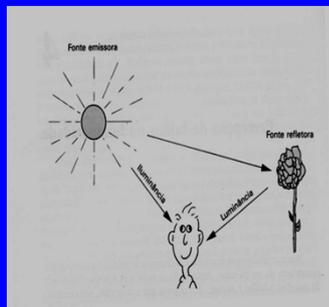
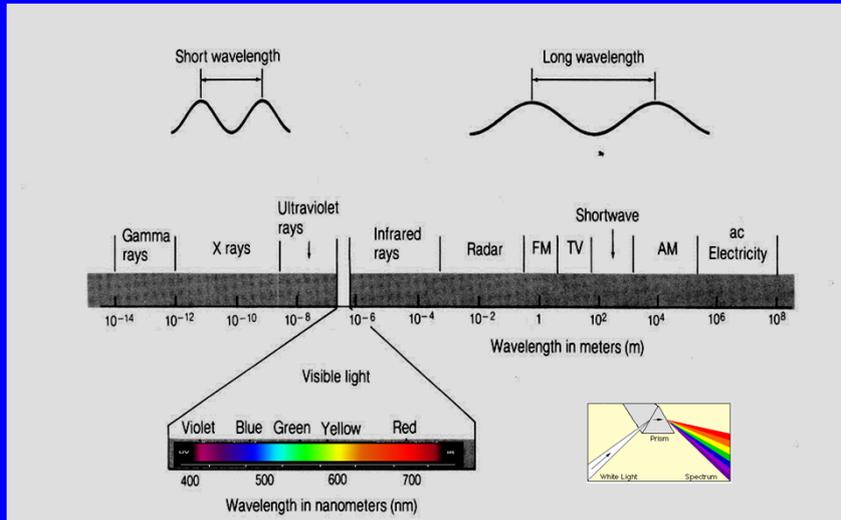
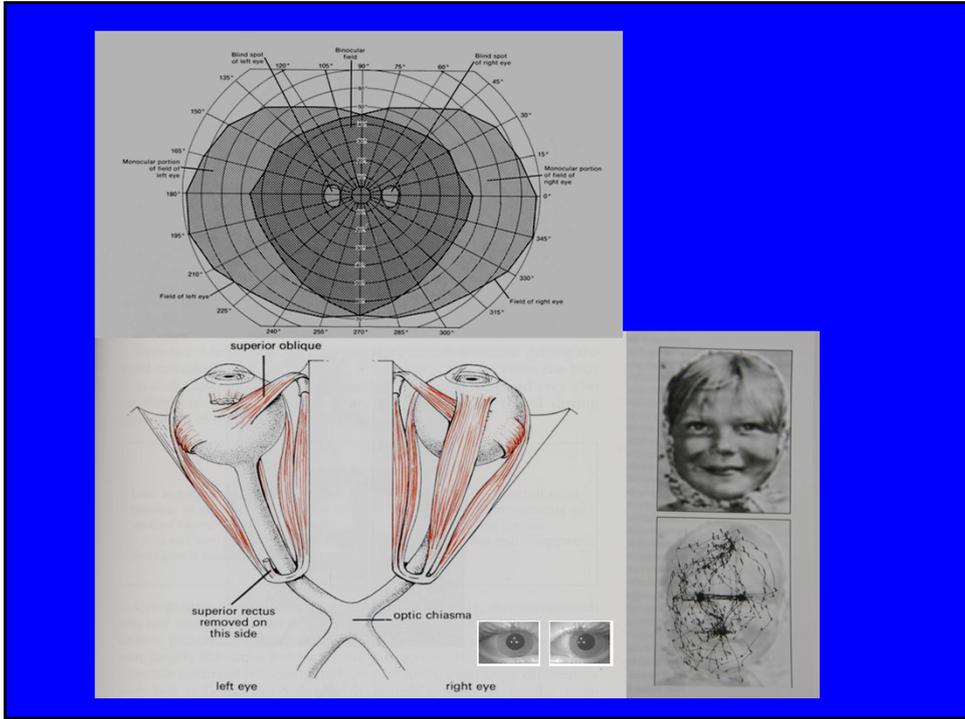


Table 4-1 Photometric Units

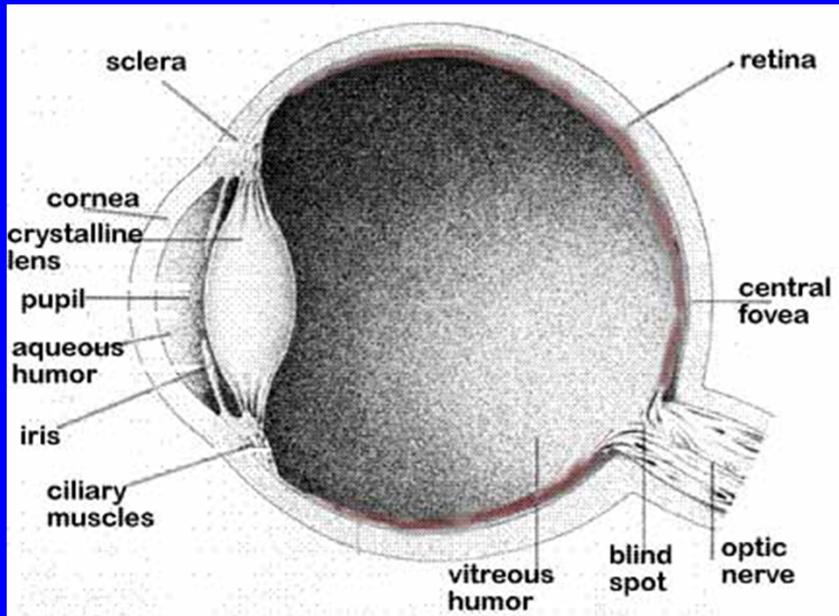
<i>Photometric term</i>	<i>What is measured</i>	<i>Unit</i>	<i>How measured</i>	<i>Comments</i>
Radiance or luminous flux	Radiant energy from a light source	Lumen	A candela is the light of a 1-lumen source at a distance of 1 m shone on a square meter	Defined in terms of a standard candle (candela)
Illuminance	Light falling on a surface	Lux	1 lumen/m ²	As the source moves farther away illuminance decreases
Luminance	Light reflected from a surface	Candelas per square meter	Lumens reflected from a surface	Independent of distance of eye from surface
Reflectance (albedo)	Proportion of light reflected from surface	Percentage reflectance	$\frac{\text{Luminance}}{\text{Illuminance}} \times 100$	Really ratio of reflected to incident light
Retinal illuminance	Amount of light incident on the retina	Trolands	1 candela/m ² seen through pupil of 1 mm ² area	Roughly 0.0036 lumens/m ² through a 1-mm ² pupil
Brightness	Phenomenal impression of light intensity	Not yet agreed on, but bril is best contender	Relative matching and scaling techniques	Psychological rather than physical quantity

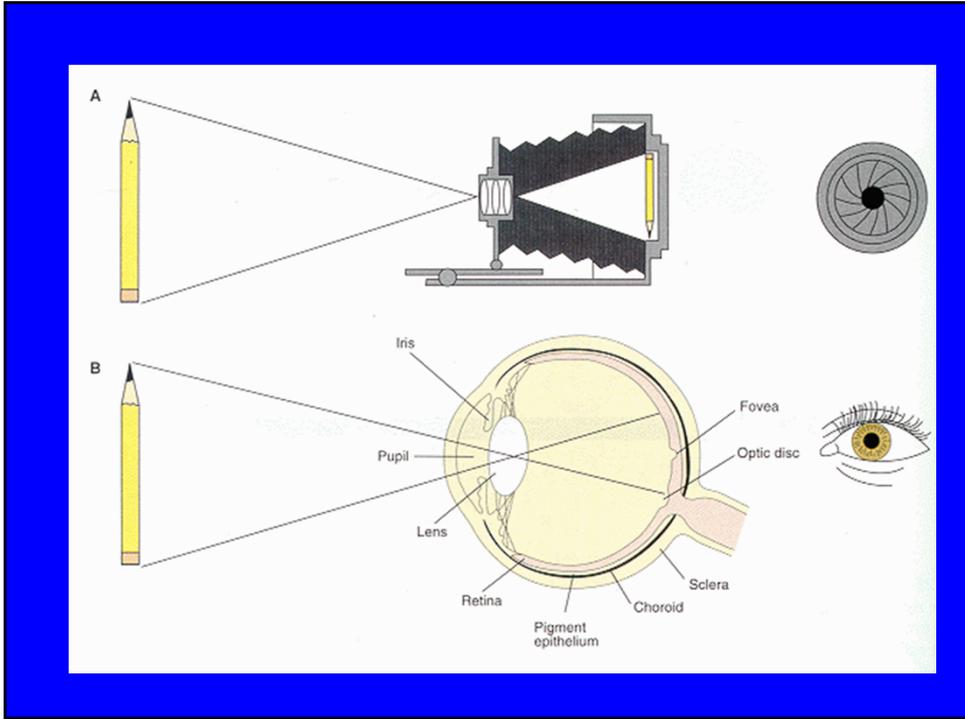
Sistema Visual Humano





Estrutura do Olho Humano





ACOMODAÇÃO

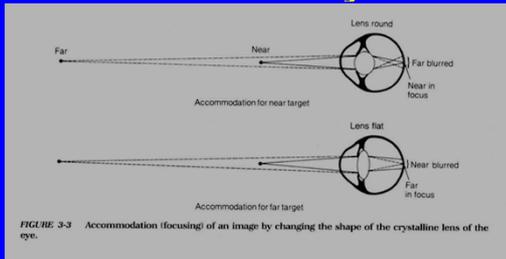


FIGURE 3-3 Accommodation (focusing) of an image by changing the shape of the crystalline lens of the eye.

CONVERGÊNCIA

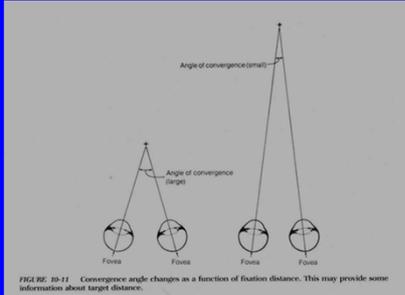


FIGURE 3-11 Convergence angle changes as a function of fixation distance. This may provide some information about target distance.

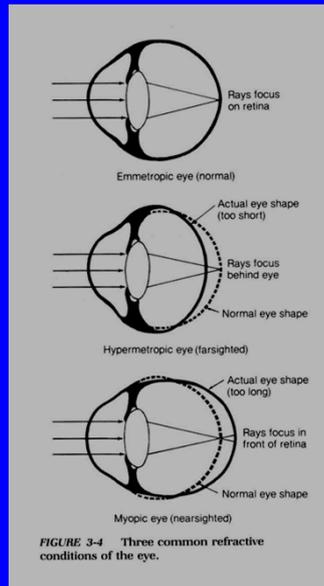
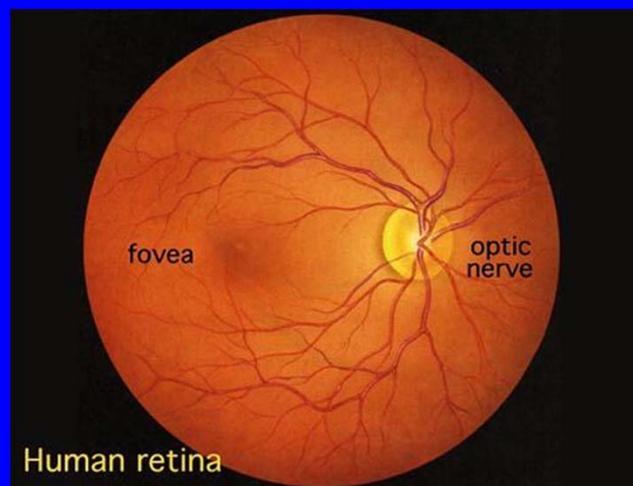


FIGURE 3-4 Three common refractive conditions of the eye.

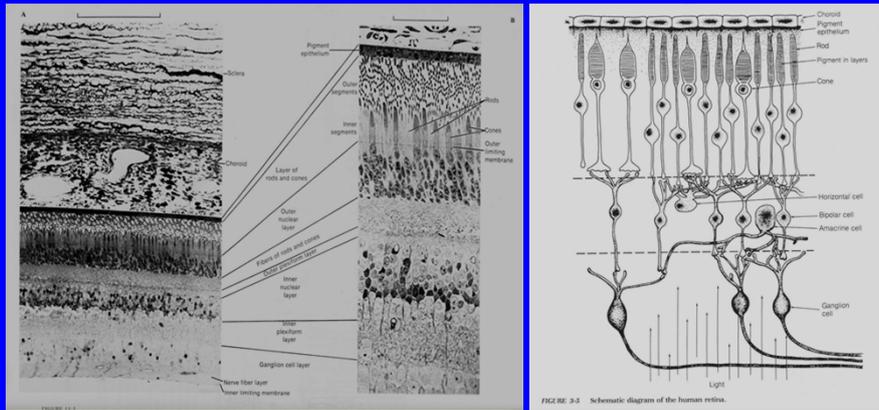
Efeito da Foveação



Fundo de Olho Humano



Retina



Receptores: Bastonetes e Cones

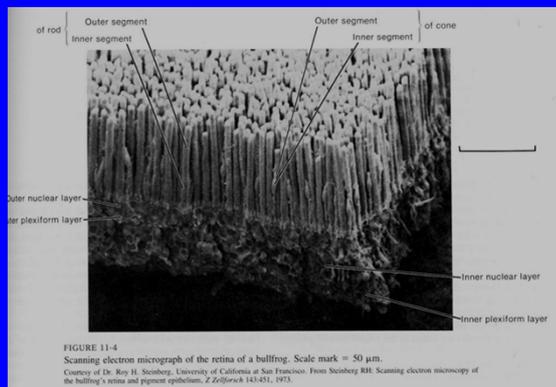


FIGURE 11-4 Scanning electron micrograph of the retina of a bullfrog. Scale mark = 50 μm. Courtesy of Dr. Roy H. Steinberg, University of California at San Francisco. From Steinberg RH: Scanning electron microscopy of the bullfrog's retina and pigment epithelium. *J Zool* 143:451, 1975.

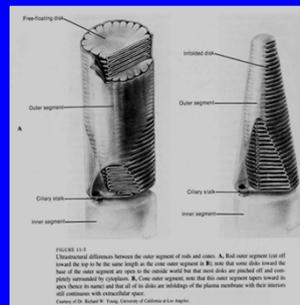
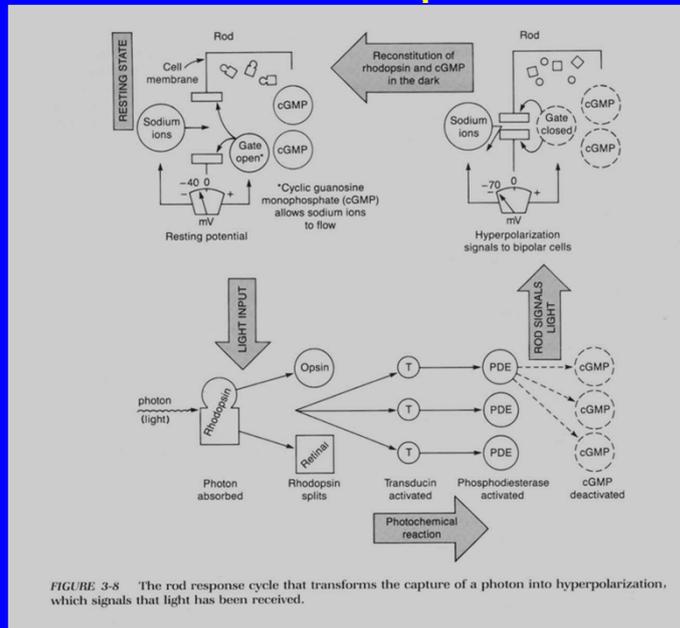
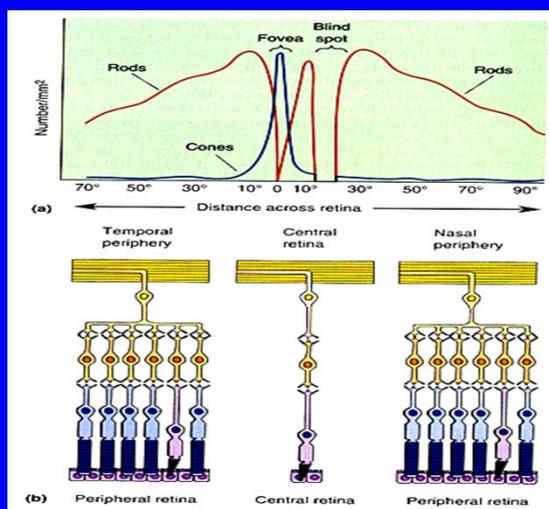
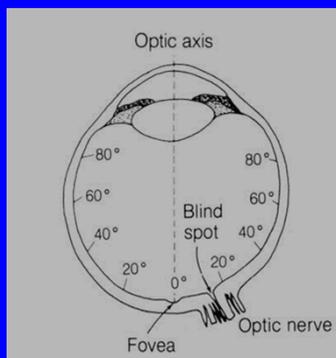


FIGURE 11-5 Structural differences between the outer segments of rods and cones. A, Rod outer segment (cut off toward the top to be the same length as the cone outer segment in B); note that some disks toward the base of the rod segment are open to the vitreous body but that most disks are packed off and completely surrounded by cytoplasm. B, Cone outer segment; note that this outer segment opens toward its apex. (Note the space and that all of the disks are solidified by the plasma membrane with both external and internal membranes with intracellular space.) Courtesy of Dr. Roy H. Steinberg, University of California at San Francisco.

Transdução



Distribuição de Bastonetes e Cones

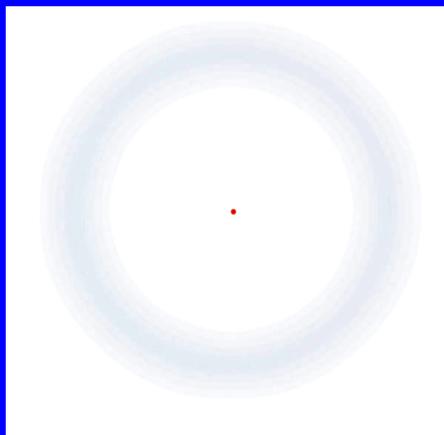


Disco Óptico e a Mancha Cega



Completamento Perceptual (*filling-in*)

Adaptação Visual



Mapeamento das Funções Visuais

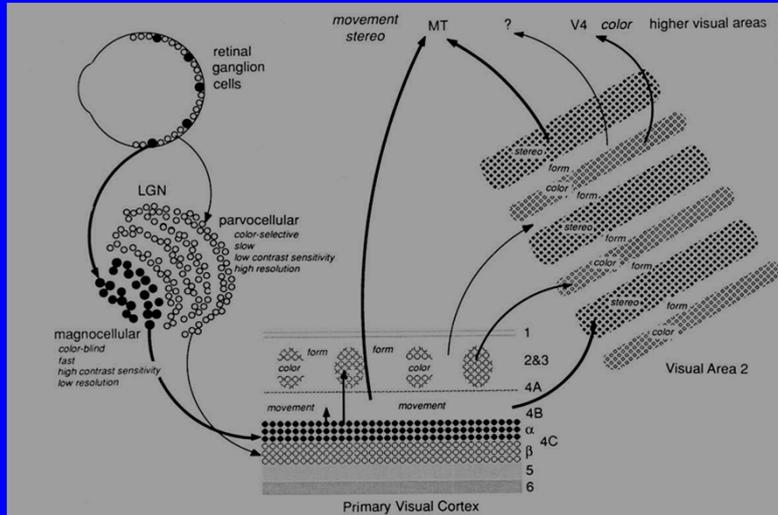
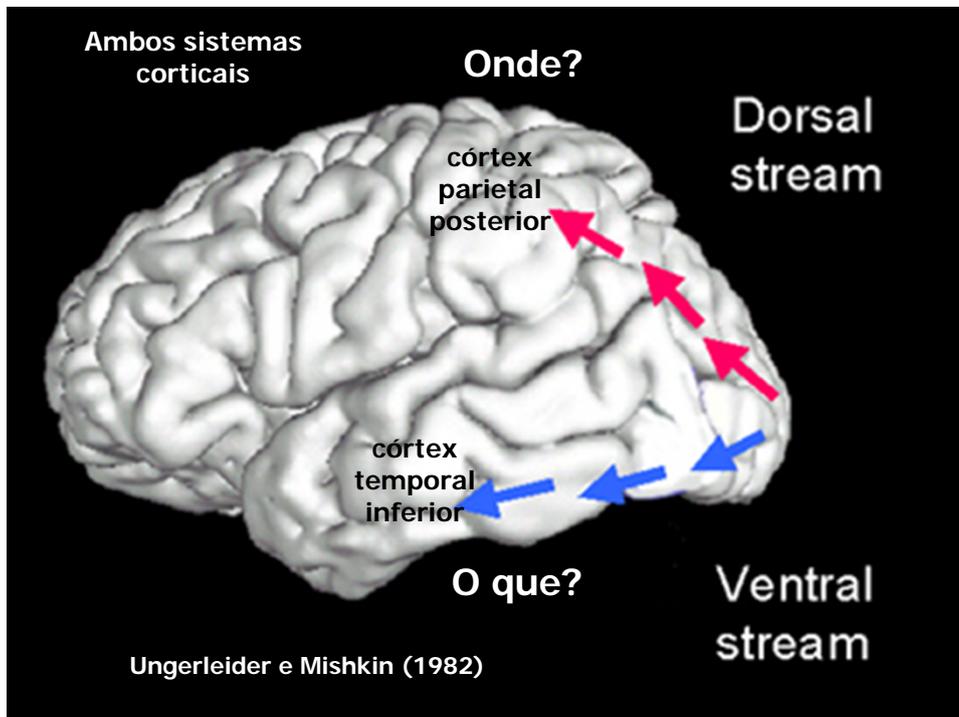
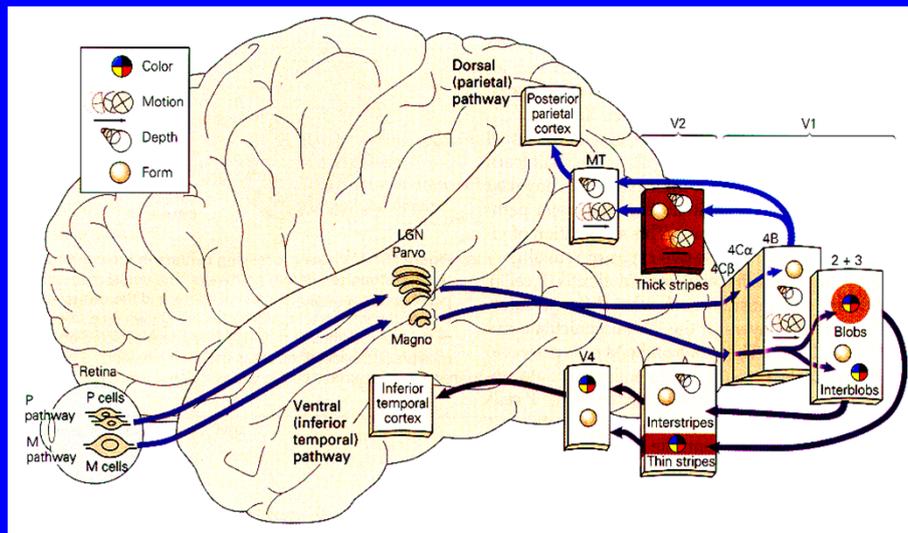
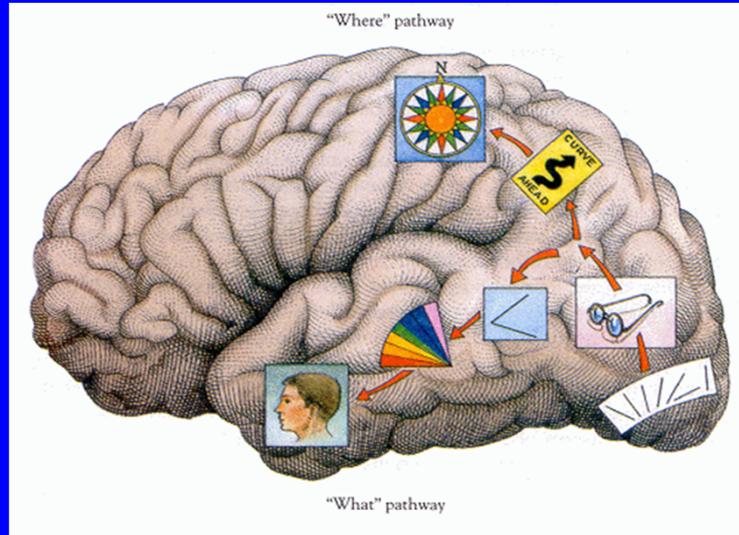
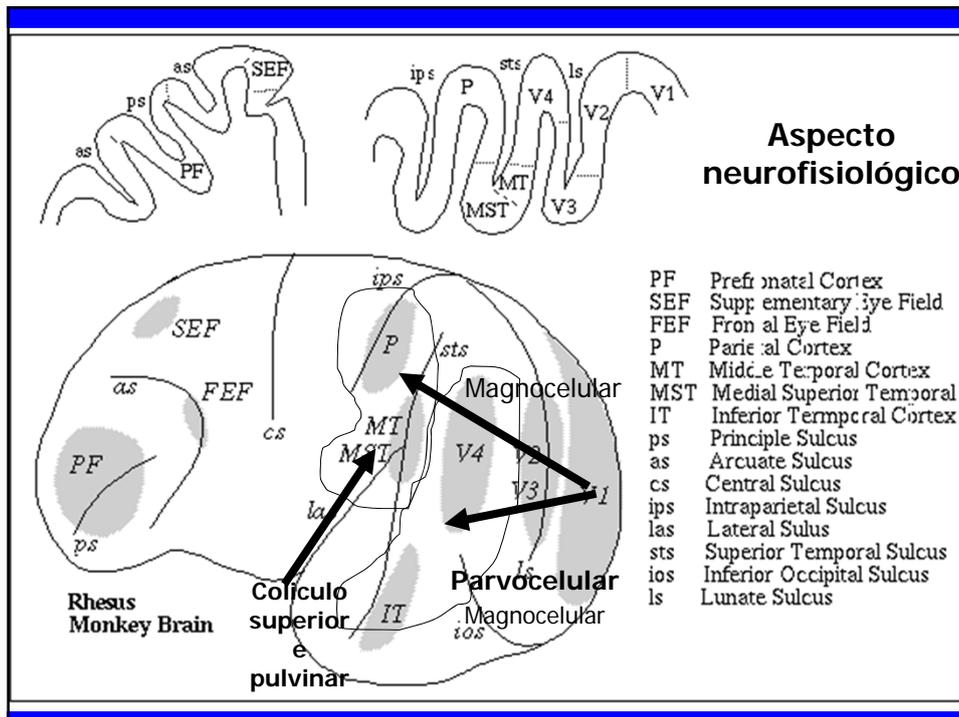


Fig. 2.10: Anatomical interconnection scheme of the neurons of the human color-coding system. The retinal ganglion cells project into the parvocellular lateral geniculate nucleus (LGN) and via the β -band of the primary visual cortex and visual area 2 (V2) to visual area V4. (After Livingstone and Hubel, 1988.)

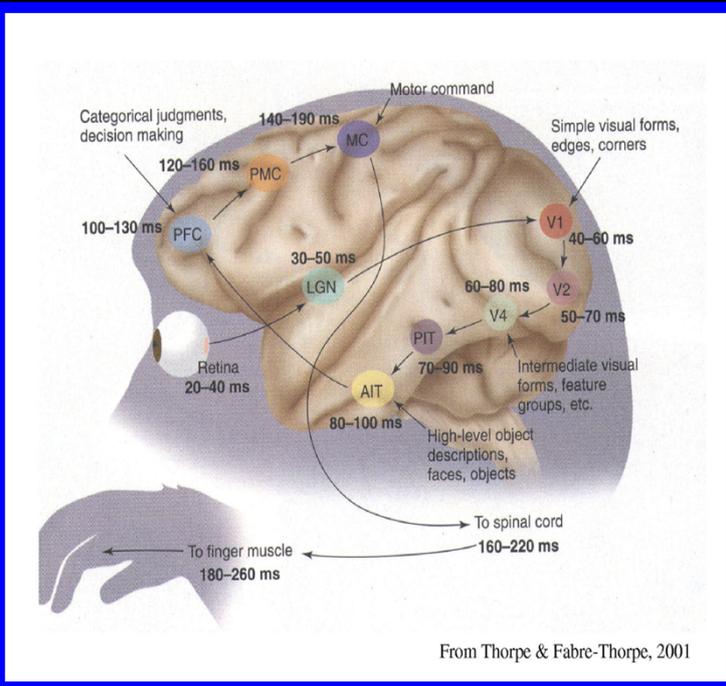


Vias do Sistema Visual





Variáveis	Sistema Ventral	Sistema dorsal
Função	Reconhecimento e identificação	Análise do estímulo visual guiado para o comportamento
Sensibilidade	Mais sensível a altas frequências espaciais	Mais sensível a altas frequências temporais
Memória	Memória-baseado	Apenas um arquivo mnêmico de curto-prazo
Velocidade	Mais lento (Parvocelular e magnocelular inputs)	Mais rápido (magnocelular inputs)
Consciência	Mais consciente	Menos consciente
Referência métrica	Métrica relativa na identificação	Métrica absoluta na identificação, em especial do movimento
Input visual	Foveal ou parafoveal input. Menor dificuldade na visão monocular	Retina mais periférica. Maior dificuldade na visão monocular
Similaridades e sinergismos de interação	Por processos diferentes, ambos os sistemas processam tamanhos, formas e distâncias. Sinergicamente, o sistema ventral escolhe os objetos sobre os quais o sistema dorsal faz sua atuação motora	



From Thorpe & Fabre-Thorpe, 2001